State Laboratory Institute
Diagnostic Testing for Arboviruses in Humans

Serologic tests and viral culture are available for diagnostic testing for evidence of infection with West Nile virus (WNV), eastern equine encephalitis (EEE) virus and other arboviruses. PCR is also available for detection of RNA of WNV and EEE virus. Multiple tests will be performed to identify viral infection and/or confirm exposure to virus. Testing may require that follow up (convalescent) specimens be submitted.

The following information is critical for accurate interpretation of test results:
Date of onset of disease symptoms
Date of specimen collection
Unusual immunological status of patient (e.g. immunosuppression)
Travel history (e.g., travel to flavivirus-endemic areas)
Vaccination history (e.g., vaccination against yellow fever, Japanese encephalitis or Central European encephalitis)
Disease history (e.g., previous history of viral encephalitis or dengue fever)
Brief clinical summary including suspected diagnosis (e.g., encephalitis or meningitis)

Specimen types and amounts
Acute serum (≥ 3ml) and CSF (≥ 1ml) should be collected within the first 14 days following onset of symptoms and sent immediately to the State Laboratory. IgM antibody in serum is present in the majority of infected individuals by day 8, but may be present earlier. By 3 weeks after onset (often earlier), virtually all infected individuals will have IgG antibody by enzyme immunoassay (EIA) and plaque reduction neutralization assay (PRNT). In general, convalescent specimens should be drawn approximately 10-14 days after acute phase specimens.

CSF, brain and other tissues will be evaluated by cell culture and, if a sufficient specimen is available, by PCR. Specimens submitted for viral isolation within 48 hrs should be stored and shipped at 4°C. If already frozen, specimens should be shipped on dry ice.

Clinical specimens should be submitted using the State Laboratory Institute's clinical specimen submission form (SS-SL-1-05) (http://www.mass.gov/dph/bls/generalform.pdf). Additional arboviral information can be found on MDPH's arbovirus website (http://www.mass.gov/dph/wnv/wnv1.htm).

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